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EXAMINER				
PIZIALI, JEFFREY J				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,529

**Applicant(s)**

ZHOU ET AL.

**Examiner**

Jeff Piziali

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/28/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 28 December 2005.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement (e.g., see Page 6, Line 26). 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "35'" (e.g., see Fig. 3) and "44" (e.g., see Fig. 4). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being

amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the figures.

#### *Specification*

5. The disclosure is objected to because of the following informalities:

The term, "*shoter*" should be changed, for example to, "*shorter*" (see Page 3, Line 10).

The phrase, "*separated by by*" should be changed, for example to, "*separated by*" (see Page 12, Line 27).

Appropriate correction is required.

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter:

*"charged particles"* (in line 3); *"enabling particles"* (in line 11); and *"enabling the particles"* (in line 13). It would be unclear to one having ordinary skill in the art at the time of invention whether the *"particles"* refers to a subset of the *"charged particles"*; whether the set of *"particles"* is identical to the set of *"charged particles"*; or rather whether the set of *"particles"* is completely distinct and independent from the set of *"charged particles"*.

An omitted structural cooperative relationship results from the claimed subject matter:

*"picture elements"* (in line 4); and *"a picture element"* (in line 17). It would be unclear to one having ordinary skill in the art at the time of invention whether *"a picture element"* is an element common to the plurality of *"picture elements"*; or rather whether the *"picture element"* is distinct and independent from the *"picture elements"*.

An omitted structural cooperative relationship results from the claimed subject matter: "*drive means*" (in line 7); "*the driver means being*" (in line 8); and "*the drive means are*" (in line 15). The lack of a grammatical article (such as "a" or "a plurality of" or "the" or "said") preceding the limitation "*drive means*" (in line 7) renders it unclear whether the claim is establishing a new element; or instead referring back to some preestablished limitation. Additionally, due to the verb tenses later used in the claim, it would be unclear to an artisan whether a single "*drive means*" element is being claimed; or rather whether a plurality of "*drive means*" elements are being claimed.

An omitted structural cooperative relationship results from the claimed subject matter: "*the extreme positions*" (in line 12); and "*the position*" (in line 14). It would be unclear to one having ordinary skill in the art whether "*the position*" is identical to one of the "*the extreme positions*"; or rather whether "*the position*" is distinct and independent from "*the extreme positions*".

10. The term "*substantially occupy*" (in claim 1, line 11) is a relative term which renders the claim indefinite. The term "*substantially*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*substantial*" an "*occupation*" must be before it would constitute being "*substantially occupied*".

11. The term "*extreme positions*" (in claim 1, line 12) is a relative term which renders the claim indefinite. The term "*extreme*" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*extreme*" a "*position*" must be before it would qualify as being an "*extreme position*".

12. Claim 1 recites the limitation "*the extreme positions*" (in line 12). There is insufficient antecedent basis for this limitation in the claim.

13. Claim 1 recites the limitation "*the image information*" (in line 14). There is insufficient antecedent basis for this limitation in the claim.

14. The term "*extreme optical state*" (in claim 1, line 17) is a relative term which renders the claim indefinite. The term "*extreme*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*extreme*" an "*optical state*" must be before it would qualify as being an "*extreme optical state*".

15. Claim 1 recites the limitation "*two or more pulses*" (in line 18). There is insufficient antecedent basis for this limitation in the claim.

16. Claims 2-10 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*an electrophoretic display panel*" (in line 1 of each dependent claim). It would be unclear to one having ordinary skill in the art at the time of invention whether the "*electrophoretic display panel*" in each dependent claim is identical to the "*electrophoretic display panel*" (in claim 1, line 1); or rather whether the "*electrophoretic display panel*" in each dependent claim is distinct from the "*electrophoretic display panel*" of the base claim(s).

17. Claim 2 recites the limitation "*the same polarity*" (in line 4). There is insufficient antecedent basis for this limitation in the claim.

18. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 4); "*an extreme optical state*" (in line 5); "*two or more pulses*" (in line 5); "*a non-zero time interval*" (in line 6); and "*a reset period*" (in line 6). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.



19. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 3); "*one optical state*" (in line 3); "*an extreme optical state*" (in line 4); and "*two or more pulses*" (in line 4). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

20. Claim 4 recites the limitation "*image transitions*" (in line 5). There is insufficient antecedent basis for this limitation in the claim.

21. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 4); "*an optical state*" (in line 4); "*an extreme optical state*" (in line 4); and "*two pulses*" (in line 5). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

22. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 4); "*an optical state*" (in line 4); "*an extreme optical state*" (in line 4); and "*two pulses*" (in line 5). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

23. The term "*around 25% and 75%*" (in claim 7, line 3) is a relative term which renders the claim indefinite. The term "*around*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close to 25% and/or 75% something must be before it would qualify as being "*around 25% and 75%*".

24. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*two or more pulses*" (in line 3) and "*an extreme optical state*" (in line 5). In each above

instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

25. Claim 8 recites the limitation "*the transition*" (in line 4). There is insufficient antecedent basis for this limitation in the claim.

26. The term "*substantially equal time duration*" (in claim 8, line 6) is a relative term which renders the claim indefinite. The term "*substantially*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close two "*time durations*" must be before they would constitute being "*substantially equal*".

27. The term "*substantially equal length*" (in claim 9, line 7) is a relative term which renders the claim indefinite. The term "*substantially*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close two "*lengths*" must be before they would constitute being "*substantially equal*".

28. Claim 10 is indefinite where it specifies "*preset*" (in lines 4, 6, and 8), since "*preset*," according to applicant's definition, merely means "*set beforehand*" or "*determined beforehand*."

For example, see *Joseph E. Seagram & Sons, Inc. V. Marzall*, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

29. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*particles*" (in line 9). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

30. Claim 10 recites the limitation "*sign*" (in line 7). There is insufficient antecedent basis for this limitation in the claim.

31. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*picture elements*" (in line 4); "*elements*" (in line 5); "*picture elements*" (in line 6); and "*a picture element*" (in line 7). It would be unclear to one having ordinary skill in the art at the time of invention whether "*elements*" are identical to the set of "*picture elements*"; whether the

*"elements"* are a smaller subset of the *"picture elements"*; or rather whether the *"elements"* are distinct and independent from the *"picture elements"*.

It would be unclear to one having ordinary skill whether each *"picture elements"* limitation refers to the same identical set of *"picture elements"*; or rather whether each *"picture elements"* limitation refers to distinct and independent sets of *"picture elements"*

It would be unclear to one having ordinary skill in the art at the time of invention whether *"a picture element"* is an element common to the plurality of *"picture elements"*; or rather whether the *"picture element"* is distinct and independent from the *"picture elements"*.

An omitted structural cooperative relationship results from the claimed subject matter: *"method reset pulses"* (in line 4); and *"two or more pulses"* (in line 9). It would be unclear to one having ordinary skill in the art whether the *"two or more pulses"* are identical to the set of *"method reset pulses"*; whether the *"two or more pulses"* are a smaller subset of the *"method reset pulses"*; or rather whether the *"two or more pulses"* are distinct and independent from *"method reset pulses"*.

32. Claim 11 recites the limitation *"the reset potential difference"* (in line 7). There is insufficient antecedent basis for this limitation in the claim.

33. The term *"extreme optical state"* (in claim 11, line 8) is a relative term which renders the claim indefinite. The term *"extreme"* is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*extreme*" an "*optical state*" must be before it would qualify as being an "*extreme optical state*".

34. Claims 12-13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a method*" (in line 1 of each dependent claim). It would be unclear to one having ordinary skill in the art at the time of invention whether the "*method*" in each dependent claim is identical to the "*method for driving*" (in claim 11, line 1); or rather whether the "*method*" in each dependent claim is distinct from the "*method for driving*" of the base claim.

35. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 3); "*an optical state*" (in line 3); "*an extreme optical state*" (in line 3); and "*two pulses*" (in line 4). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

36. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*a picture element*" (in line 3); "*an optical state*" (in line 3); "*an extreme optical state*" (in line 3); and "*two pulses*" (in line 4). In each above instance, it would be unclear to one having ordinary skill in the art whether the dependent claim elements are identical to the elements recited in the base claim; or rather whether the dependent claim elements are distinct from the elements recited in the base claim.

37. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*charged particles*" (in line 4); "*enabling particles*" (in line 11); and "*enabling the particles*" (in line 13). It would be unclear to one having ordinary skill in the art at the time of invention whether the "*particles*" refers to a subset of the "*charged particles*"; whether the set of "*particles*" is identical to the set of "*charged particles*"; or rather whether the set of "*particles*" is completely distinct and independent from the set of "*charged particles*".

An omitted structural cooperative relationship results from the claimed subject matter: "*a plurality of picture elements*" (in line 5); and "*a picture element*" (in line 16). It would be unclear to one having ordinary skill in the art at the time of invention whether "*a picture*

*element*" is an element common to the plurality of "*picture elements*"; or rather whether the "*picture element*" is distinct and independent from the "*picture elements*".

An omitted structural cooperative relationship results from the claimed subject matter: "*one of the extreme positions*" (in line 12); and "*the position*" (in line 14). It would be unclear to one having ordinary skill in the art whether "*the position*" is identical to one of the "*the extreme positions*"; or rather whether "*the position*" is distinct and independent from "*the extreme positions*".

38. The term "*substantially occupy*" (in claim 14, line 11) is a relative term which renders the claim indefinite. The term "*substantially*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*substantial*" an "*occupation*" must be before it would constitute being "*substantially occupied*".

39. The term "*one of the extreme positions*" (in claim 14, line 12) is a relative term which renders the claim indefinite. The term "*extreme*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "*extreme*" a "*position*" must be before it would qualify as being an "*extreme position*".



Art Unit: 2629

40. Claim 14 recites the limitation "***one of the extreme positions***" (in line 12). There is insufficient antecedent basis for this limitation in the claim.

41. Claim 14 recites the limitation "***the image information***" (in line 14). There is insufficient antecedent basis for this limitation in the claim.

42. The term "***an extreme optical state***" (in claim 14, line 17) is a relative term which renders the claim indefinite. The term "***extreme***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how "***extreme***" an "***optical state***" must be before it would qualify as being an "***extreme optical state***".

43. Claim 14 recites the limitation "***two or more pulses***" (in line 18). There is insufficient antecedent basis for this limitation in the claim.

### ***Conclusion***

44. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents listed on the attached '***Notice of References Cited***' are cited to further evidence the state of the art pertaining to electrophoretic displays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/  
Primary Examiner, Art Unit 2629  
24 April 2008